



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

NMFS Tracking No.:
2003/01205

February 10, 2004

ATTN: Greg M. Yuncevich
Field Manager
Bureau of Land Management
House 1, Butte Drive - Route 3, Box 181
Cottonwood, Idaho 83522-9498

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Whiskey South Timber Harvest and Fuels Treatment Project, Upper South Fork Clearwater River, 170603050403, Lower Crooked River, 170603050801, Lower Red River, 170603050701, Idaho County, Idaho (One action)

Dear Mr. Yuncevich:

Enclosed is a document containing a biological opinion (Opinion) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of the proposed Whiskey South Timber Harvest and Fuels Treatment Project, Upper South Fork Clearwater River, 170603050403, Lower Crooked River, 170603050801, Lower Red River, 170603050701, Idaho County, Idaho. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of ESA-listed Snake River steelhead. As required by section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with nondiscretionary terms and conditions that NOAA Fisheries believes are necessary to minimize the impact of incidental take associated with this action.

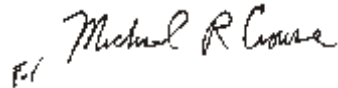
This document contains a consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulations (50 CFR Part 600). NOAA Fisheries concludes that the proposed action may adversely affect designated EFH for chinook salmon. As required by section 305(b)(4)(A) of the MSA, included



are conservation recommendations that NOAA Fisheries believes will avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from the proposed action. As described in the enclosed consultation, 305(b)(4)(B) of the MSA requires that a Federal action agency must provide a detailed response in writing within 30 days of receiving an EFH conservation recommendation.

If you have any questions regarding this letter, please contact Mr. Kevin Traylor or Mr. Dale Brege of my staff in the Idaho Habitat Office at (208) 983-3859.

Sincerely,

A handwritten signature in black ink that reads "Michael R. Crouse". The signature is written in a cursive style with a small "P.1" or similar mark to the left of the first name.

D. Robert Lohn
Regional Administrator

cc: J. Foss - USFWS
M. Benker - IDFG
I. Jones - NPT
K. Stangl - BLM
P. Clark - NPNF

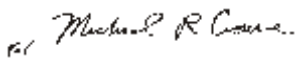
**Endangered Species Act Section 7 Consultation Biological Opinion
and
Magnuson-Stevens Fishery Conservation and Management Act
Essential Fish Habitat Consultation**

Whiskey South Timber Harvest and Fuels Treatment Project
Snake River Steelhead
Upper South Fork Clearwater River (170603050403)
Lower Crooked River (170603050801)
Lower Red River (170603050701)
Idaho County, Idaho

Lead Action Agency: Bureau of Land Management

Consultation Conducted By: NOAA's National Marine Fisheries Service (NOAA Fisheries)
Northwest Region (NWR)

Date Issued: February 10, 2004

Issued by: 
D. Robert Lohn
Regional Administrator

NMFS Tracking No.: 2003/01205

TABLE OF CONTENTS

1. INTRODUCTION	1
1.1 Background and Consultation History	1
1.2 Proposed Action	2
1.3 Description of the Action Area	3
2. ENDANGERED SPECIES ACT - BIOLOGICAL OPINION	3
2.1 Evaluating the Effects of the Proposed Action	3
2.1.1 Biological Requirements	4
2.1.2 Status and Generalized Life History of Listed Species	5
2.1.3 Environmental Baseline in the Action Area	7
2.2 Analysis of Effects	11
2.2.1 Habitat Effects	11
2.2.2 Species Effects	18
2.2.3 Cumulative Effects	18
2.2.4 Consistency with Listed Species ESA Recovery Strategies	20
2.3 Conclusions	20
2.3.1 Species Conclusion	21
2.4 Conservation Recommendations	22
2.5 Reinitiation of Consultation	22
2.6 Incidental Take Statement	23
2.6.1 Amount or Extent of Take	23
2.6.2 Reasonable and Prudent Measures	24
2.6.3 Terms and Conditions	25
3. MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT	30
3.1 Statutory Requirements	30
3.2 Identification of EFH	31
3.3 Proposed Action	32
3.4 Effects of Proposed Action on EFH	32
3.5 Conclusion	32
3.6 EFH Conservation Recommendations	33
3.7 Statutory Response Requirement	34
3.8 Supplemental Consultation	34
4. REFERENCES	35

TABLES

Table 1. References for Additional Background on Listing Status	6
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1. INTRODUCTION

The Endangered Species Act (ESA) of 1973 (16 USC 1531-1544), as amended, establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat on which they depend. Section 7(a)(2) of the ESA requires Federal agencies to consult with NOAA's National Marine Fisheries Service (NOAA Fisheries) and U.S. Fish and Wildlife Service (together "Services"), as appropriate, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their designated critical habitats. This biological opinion (Opinion) is the product of an interagency consultation pursuant to section 7(a)(2) of the ESA and implementing regulations 50 CFR 402.

The analysis also fulfills the Essential Fish Habitat (EFH) requirements under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under a Federal fisheries management plan. Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (section 305(b)(2)).

The Cottonwood Resource Area of the Bureau of Land Management (BLM) proposes to conduct a mix of timber harvest prescriptions, new and temporary road construction, road decommissioning and abandonment, road stabilization, culvert replacements, and forest underburning. The purpose of the Whiskey South Timber Harvest and Fuels Treatment Project (Whiskey South Fuels Project) is to reduce the potential occurrence of uncontrollable or high intensity wildfires in the Elk City area, modify vegetative conditions to achieve certain silvicultural or ecological goals, and to improve elk winter range habitat. The BLM is proposing the action according to its authority under the Federal Land Policy and Management Act. The administrative record for this consultation is on file at the Idaho Habitat Office.

1.1 Background and Consultation History

The BLM presented a summary of the Whiskey South Fuels Project to NOAA Fisheries at the North-Central Idaho Level 1 Team meeting on January 8, 2003. A draft biological assessment (BA) was received by NOAA Fisheries on July 28, 2003. The BLM amended the BA and submitted it to NOAA Fisheries on August 11, 2003, for review. The Level 1 Team reached closure on the project on August 19, 2003. NOAA Fisheries received a complete BA and EFH assessment on the Whiskey South Fuels Project on September 8, 2003, and consultation was initiated at that time. On November 17, 2003, NOAA Fisheries received an addendum to the final BA from the BLM to include an additional 0.8 miles of road decommissioning.

The BA determined that the proposed action is “likely to adversely affect” Snake River steelhead, would have “no effect” on Snake River fall chinook salmon and designated critical habitat, and would “not adversely affect” chinook salmon EFH. The rationale for the “no effect” determinations for Snake River fall chinook salmon and designated critical habitat is based on the fact that fall chinook salmon and critical habitat occurs approximately 90 miles downstream in the mainstem Clearwater River. Chinook salmon in the action area are not currently listed under the ESA.

The Whiskey South Fuels Project would likely affect tribal trust resources. Because the Whiskey South Fuels Project is likely to affect tribal trust resources, NOAA Fisheries contacted the Nez Perce Tribe (Tribe) pursuant to the Secretarial Order (June 5, 1997). A copy of the draft Opinion was electronically mailed to the Tribe for review and comments on January 9, 2004. The Tribe sent comments back to NOAA Fisheries concerning the Whiskey South Fuels Project on January 23, 2004. In general, the Tribe stated their belief that the project should be concluded with a jeopardy determination for Snake River steelhead, based on the overall project effects on steelhead habitat and the existing degraded environmental baseline. A conference call between NOAA Fisheries and the Tribe followed on January 27, 2004, during which NOAA Fisheries personnel explained the rationale for the non-jeopardy conclusion for the Snake River steelhead.

1.2 Proposed Action

Proposed actions are defined in the Services’ consultation regulations (50 CFR 402.02) as “all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas.” Additionally, U.S. Code (16 U.S.C. 1855(b)(2)) further defines a Federal action as “any action authorized, funded, or undertaken or proposed to be authorized, funded, or undertaken by a Federal agency.” Because the BLM proposes to fund the action that may affect listed resources, it must consult under ESA section 7(a)(2) and MSA section 305(b)(2).

The Whiskey South Fuels Project consists of multiple activities on 789 acres of BLM and 153 acres of Nez Perce National Forest (NPNF) administered lands. The proposed action is located approximately 5 miles west of the community of Elk City, Idaho, in portions of the upper South Fork Clearwater River watershed, the lower Crooked River watershed, and the lower Red River watershed. Proposed activities would occur over a 7-year time period, beginning in 2004 and ending in 2010, and would be conducted by BLM personnel or contractors. The proposed action includes: (1) Timber harvest and precommercial thinning on 217 acres to create a fuel break; (2) commercial thinning and salvage of insect-infested trees on 535 acres; (3) shelterwood harvest and underburning on 190 acres to improve elk winter range; (4) construction of 0.8 miles of new permanent road and 2.6 miles of temporary road; (5) decommissioning and/or abandonment of 3.8 miles of existing road; (6) stabilization of approximately 5.2 miles of new and existing road; and (7) two culvert replacements. Treatment in riparian habitat conservation areas (RHCAs) would consist of understory removal and low

intensity burn in harvest units along the South Fork Clearwater, and thinning and shelterwood harvest followed by a moderate burn along Crooked River. The proposed action includes cable yarding, tractor skidding, and helicopter harvest methods. Detailed maps and a description of the proposed activities are provided in the Whiskey South Fuels Project BA.

1.3 Description of the Action Area

An action area is defined by the Services' regulations (50 CFR Part 402) as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The area affected by the proposed action is located between, and includes, the upper South Fork Clearwater River, lower Crooked River, and lower Red River. The sixth field hydrologic unit codes (HUCs) encompassing the action area are: 170603050403 (Upper South Fork Clearwater River), 170603050801 (Lower Crooked River), and 170603050701 (Lower Red River). This area serves as spawning, rearing, and migratory habitat for chinook salmon EFH and the Snake River steelhead Evolutionarily Significant Unit (ESU).

2. ENDANGERED SPECIES ACT - BIOLOGICAL OPINION

The objective of this Opinion is to determine whether the Whiskey South Fuels Project is likely to jeopardize the continued existence of Snake River steelhead.

2.1 Evaluating the Effects of the Proposed Action

The standards for determining jeopardy and destruction or adverse modification of critical habitat are set forth in section 7(a)(2) of the ESA. In conducting analyses of habitat-altering actions under section 7 of the ESA, NOAA Fisheries uses the following steps of the consultation regulations and when appropriate¹ combines them with The Habitat Approach (NMFS 1999):

- (1) Consider the biological requirements and status of the listed species; (2) evaluate the relevance of the environmental baseline in the action area to the species' current status;
- (3) determine the effects of the proposed or continuing action on the species, and whether the action is consistent with any available recovery strategy; and (4) determine whether the species can be expected

¹The Habitat Approach is intended to provide guidance to NOAA Fisheries staff for conducting analyses, and to explain the analytical process to interested readers. As appropriate, The Habitat Approach may be integrated into the body of Opinions. NOAA staff are encouraged to share The Habitat Approach document with colleagues from other agencies and private entities who are interested in the premises and analysis methods.

to survive with an adequate potential for recovery under the effects of the proposed or continuing action, the effects of the environmental baseline, and any cumulative effects, and considering measures for survival and recovery specific to other life stages. In completing this step of the analysis, NOAA Fisheries determines whether the action under consultation, together with all cumulative effects when added to the environmental baseline, is likely to jeopardize the ESA-listed species or result in the destruction or adverse modification of critical habitat. If jeopardy or adverse modification are found, NOAA Fisheries may identify reasonable and prudent alternatives for the action that avoid jeopardy and/or destruction or adverse modification of critical habitat.

The fourth step above (jeopardy/adverse modification analysis) requires a two-part analysis. The first part focuses on the action area and defines the proposed action's effects in terms of the species' biological requirements in that area (i.e., effects on essential features). The second part focuses on the species itself. It describes the action's effects on individual fish, populations, or both, and places that impact in the context of the ESU as a whole. Ultimately, the analysis seeks to determine whether the proposed action is likely to jeopardize a listed species' continued existence or destroy or adversely modify its critical habitat. Critical habitat is not currently designated for listed steelhead; therefore this Opinion does not evaluate adverse modification of critical habitat. This Opinion does, however, consider effects on steelhead habitat to the extent that they affect the species.

2.1.1 Biological Requirements

The first step NOAA Fisheries uses when applying ESA section 7(a)(2) to the listed ESU considered in this Opinion includes defining the species' biological requirements within the action area. Biological requirements are population characteristics necessary for the listed ESU to survive and recover to naturally reproducing population sizes at which protection under the ESA would become unnecessary. The listed species' biological requirements may be described as characteristics of the habitat, population or both (McElhany *et al.* 2000). Interim recovery numbers for Snake River steelhead in the South Fork Clearwater River subbasin are 3,400 spawners (NMFS 2002). NOAA Fisheries uses lambda (λ) to represent the long-term population growth rate. In order to attain interim recovery numbers, lambda must be greater than one, indicating an increasing population.

For actions that affect freshwater habitat, NOAA Fisheries may describe the habitat portion of a species' biological requirements in terms of a concept called properly functioning condition (PFC). The PFC is defined as the sustained presence of natural² habitat-forming processes in a watershed that are necessary for the long-term survival of the species through the full range of environmental variation

²The word "natural" in this definition is not intended to imply "pristine," nor does the best available science lead us to believe that only pristine wilderness will support salmon.

(NMFS 1999). The PFC, then, constitutes the habitat component of a species' biological requirements. Although NOAA Fisheries is not required to use a particular procedure to describe biological requirements, it typically considers the status of habitat variables in a matrix of pathways and indicators (MPI) (refer to Table 1 in NMFS 1996) that was developed to describe PFC in forested, montane watersheds. In the PFC framework, baseline environmental conditions are described as "properly functioning," "at risk," or "not properly functioning."

2.1.2 Status and Generalized Life History of Listed Species

In this step, NOAA Fisheries also considers the current status of the listed species within the action area, taking into account population size, trends, distribution, and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list the species and also considers any new data that is relevant to the species' status. A general discussion of steelhead life history is provided in NMFS (2001), available on the NOAA Fisheries website (http://www.nwr.noaa.gov/1habcon/habweb/habguide/bioptemplate_app_a.pdf).

The BLM found that the Whiskey South Fuels Project is likely to adversely affect Snake River steelhead identified in Table 1. Based on the life history of this ESU, the BLM determined that it is likely that adult spawning, incubation, and juvenile rearing (fry to smolt stages) would be adversely affected by the project.

Columbia River salmon and steelhead populations have experienced a long-term decline in numbers since the 1870s (NRC 1996). Population declines have been caused by a variety of factors, including fishing, hydropower development, ocean conditions, and habitat that has been degraded or lost through agriculture, ranching, mining, timber harvest and urbanization (NRC 1996). Pre-development estimates of Columbia River salmon and steelhead range from 7.5 million (Chapman 1986) to 16 million fish (NPPC 1986). Run sizes for adult chinook salmon and steelhead in the Columbia River, estimated from annual counts at the Bonneville Dam from 1998-2003, average around 603,075 returns and 358,698 returns, respectively (USACE 2002). Unusually large numbers of adult fish have been observed passing through Snake River dams since 2000. These large returns are thought to be largely a result of cyclic oceanic and climatic conditions favorable to anadromous fish (Marmorek and Peters 1998). It can not yet be determined if the recent population increases represent a shift in the population growth rates (due to a corresponding shift in climatic conditions), or if the change is a temporary phenomenon. Factors other than ocean conditions, such as downstream passage conditions for smolts, predation, fishing pressure, and habitat conditions in rearing areas also vary from year to year, and may offset gains from favorable ocean conditions in some years, or work synergistically in others.

Table 1. References for additional background on listing status, critical habitat designation, protective regulations, and life history for the ESA-listed species considered in this consultation.

Species ESU	Status	Critical Habitat Designation	Protective Regulations	Life History
Snake River steelhead (<i>Oncorhynchus mykiss</i>)	Threatened; August 18, 1997; 62 FR 43937	under review May 7, 2002	July 10, 2000; 65 FR 42422	Busby, <i>et al.</i> 1996; Nichelson, <i>et al.</i> 1992

2.1.2.1 Snake River Steelhead

The Snake River steelhead ESU, listed as threatened on August 18, 1997 (62 FR 43937), includes all natural-origin populations of steelhead in the Snake River basin of southeast Washington, northeast Oregon, and Idaho. None of the hatchery stocks in the Snake River basin are listed, but several are included in the ESU.

Steelhead spend 1-4 years in the ocean before returning to fresh water to spawn. Adult Snake River steelhead return to mainstem rivers from late summer through fall, where they feed for several months before moving upstream into smaller tributaries. The majority of fish disperse into tributaries from March through May, depending on the elevation. Spawning begins shortly after fish reach spawning areas, which is typically during a rising hydrograph and prior to peak flows (Thurow 1987). Steelhead typically select spawning areas at the downstream end of pools, in gravels ranging in size from one-half to 4.5 inches in diameter (Pauley *et al.* 1986). Juveniles emerge from redds in 4-8 weeks, depending on temperature. After emergence, fry have poor swimming ability. They move into shallow, low velocity areas in side channels and along channel margins to escape high velocities and predators (Everest and Chapman 1972), and progressively move toward deeper water as they grow in size (Bjornn and Rieser 1991). Juveniles typically remain in freshwater for 2 or 3 years, or longer, depending on temperature and growth rate (Mullan *et al.* 1992). Smolts migrate downstream during spring runoff, which occurs from April to mid-June in the Snake River basin.

Counts of wild and hatchery-origin steelhead returning to the Snake River basin declined sharply in the early 1970s, increased modestly from the mid-1970s through the 1980s, and declined again during the 1990s (NPPC 2003). The longest consistent indicator of steelhead abundance in the Snake River basin is derived from counts of natural-origin steelhead at the uppermost dam on the lower Snake

River. According to these estimates, the abundance of natural-origin summer steelhead at Lower Granite Dam declined from a 4-year average of 58,300 in 1964 to a 4-year average of 8,300 ending in 1998. The most recent 4-year average of wild fish (2000-2003) is 42,706 adults (USACE 2002). Parr densities in natural production areas have been substantially below estimated capacity (Hall-Griswold and Petrosky 1996). Adult returns at Lower Granite Dam dramatically increased since 2000; however, the increase is due primarily to hatchery returns, with wild fish comprising only 22% of the adult returns since 2000 (USACE 2002).

The long-term population growth rate, λ , was used by McClure *et al.* (2003) to indicate whether listed populations are increasing in numbers ($\lambda > 1$) or decreasing ($\lambda < 1$). From years 1965-2000, the estimated growth rate for the Snake River steelhead ESU as a whole, is 0.96, assuming no reproduction by hatchery fish (McClure *et al.* (2003). A population with a growth rate of 0.96 would shrink by 50% in 17 years. The growth rate for Snake River "A-run" steelhead is 0.97, and 0.93 for "B-run" steelhead. "A-run" and "B-run" fish are distinguished by differences in size, run timing, and length of ocean residence. "B-run" fish are larger, and reside longer in the ocean, and occupy a distinct range. The differences in the two fish stocks represent an important component of phenotypic and genetic diversity of the Snake River basin steelhead ESU. A four percent increase in growth rate for the Snake River steelhead ESU as a whole, and an eight percent increase for B-run steelhead are needed to sustain the species over the long term (McClure *et al.* 2003).

2.1.3 Environmental Baseline in the Action Area

The environmental baseline is defined as: "the past and present impacts of all Federal, state, or private actions and other human activities in the action area, including the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation and the impacts of state and private actions that are contemporaneous with the consultation in progress" (50 CFR 402.02). In step 2, NOAA Fisheries' evaluates the relevance of the environmental baseline in the action area to the species' current status. In describing the environmental baseline, NOAA Fisheries evaluates essential features of designated critical habitat and the listed Pacific salmon ESUs affected by the proposed action.

In general, the environment for listed species in the Columbia River Basin (CRB), including those that migrate past or spawn upstream from the action area, has been dramatically affected by the development and operation of the Federal Columbia River Power System (FCRPS). Storage dams have eliminated mainstem spawning and rearing habitat, and have altered the natural flow regime of the Snake and Columbia Rivers, decreasing spring and summer flows, increasing fall and winter flow, and altering natural thermal patterns. Power operations cause fluctuations in flow levels and river elevations, affecting fish movement through reservoirs, disturbing riparian areas and possibly stranding

fish in shallow areas as flows recede. The eight dams in the migration corridor of the Snake and Columbia Rivers kill or injure a portion of the smolts passing through the area. The low velocity movement of water through the reservoirs behind the dams slows the smolts' journey to the ocean and enhances the survival of predatory fish (Independent Scientific Group 1996, NRC 1996). Formerly complex mainstem habitats in the Columbia, Snake, and Willamette Rivers have been reduced, for the most part, to single channels, with floodplains reduced in size, and off-channel habitats eliminated or disconnected from the main channel (Sedell and Froggatt 1984; Independent Scientific Group 1996; and Coutant 1999). The amount of large woody debris in these rivers has declined, reducing habitat complexity and altering the rivers' food webs (Maser and Sedell 1994).

Other human activities that have degraded aquatic habitats or affected native fish populations in the CRB include stream channelization, elimination of wetlands, construction of flood control dams and levees, construction of roads (many with impassable culverts), timber harvest, splash dams, mining, water withdrawals, unscreened water diversions, agriculture, livestock grazing, urbanization, outdoor recreation, fire exclusion/suppression, artificial fish propagation, fish harvest, and introduction of non-native species (Henjum *et al.* 1994; Rhodes *et al.* 1994; NRC 1996; Spence *et al.* 1996; and Lee *et al.* 1997). In many watersheds, land management and development activities have: (1) Reduced connectivity (i.e., the flow of energy, organisms, and materials) between streams, riparian areas, floodplains, and uplands; (2) elevated fine sediment yields, degrading spawning and rearing habitat; (3) reduced large woody material that traps sediment, stabilizes streambanks, and helps form pools; (4) reduced vegetative canopy that minimizes solar heating of streams; (5) caused streams to become straighter, wider, and shallower, thereby reducing rearing habitat and increasing water temperature fluctuations; (6) altered peak flow volume and timing, leading to channel changes and potentially altering fish migration behavior; and (7) altered floodplain function, water tables and base flows (Henjum *et al.* 1994; McIntosh *et al.* 1994; Rhodes *et al.* 1994; Wissmar *et al.* 1994; NRC 1996; Spence *et al.* 1996; and Lee *et al.* 1997).

To address problems inhibiting salmonid recovery in CRB tributaries, the Federal resource and land management agencies developed the *All H Strategy* (Federal Caucus 2000). Components of the *All H Strategy* commit these agencies to increased coordination and a fast start on protecting and restoring.

Three watersheds would be affected by the proposed action: the upper South Fork Clearwater River, lower Crooked River, and lower Red River. The South Fork Clearwater River canyon and face drainages encompass approximately 89,198 acres. Crooked River and Red River are tributaries to the South Fork Clearwater and encompass 45,659 acres and 103,000 acres, respectively. Elevations within these watersheds range from as high as 7,200 feet at the headwaters of Crooked River to approximately 3,850 feet at the confluence of Crooked River with the South Fork Clearwater River.

Each of these watersheds provides spawning, rearing, and migratory habitat for Snake River steelhead and spring/summer chinook salmon. Crooked River and Red River both have fish weirs affiliated with Dworshak National Fish Hatchery near Orofino, Idaho. Hatchery-raised fish are removed at the weirs as they migrate up the rivers.

Habitat and stream conditions in all three watersheds have been altered by roads, timber harvest and mining, as well as grazing in the South Fork Clearwater River and Red River watersheds. There are approximately 500 miles (3.1 mi/mi²) of roads in the South Fork Clearwater River canyon, with about 160 miles located in the RHCA. There are currently 133 miles (1.87 mi/mi²) of roads in the Crooked River watershed and 588 miles (3.6 mi/mi²) of roads in the Red River watershed. Idaho State Highway 14 parallels the South Fork Clearwater River, Forest Service Road (FSR) 233 runs parallel to Crooked River, and FSR 222 runs along Red River, all of which have altered stream and riparian processes, reduced stream channel meanders, and provided major sources of sediment to the systems. Avista Utilities Incorporated currently operates and maintains a 75-mile power line right-of-way (ROW) in the three watersheds, and the majority of the ROW is located in streamside RHCAs. Portions of the ROW are within the immediate analysis area with conductors located in a roadbed or cross-country aerial lines.

Timber harvest has occurred in these watersheds since the 1860s associated with early mining activity and progressed at a fairly slow rate until the opening of timber mills in the Elk City area during the 1950s. As a result, the rate of harvest increased dramatically during the 1960s and 1970s, with clearcutting being the dominant silvicultural method. Timber has been harvested on approximately 19,545 acres (22%) of the South Fork Clearwater face drainages, 5,000 acres (11%) of the Crooked River watershed and 23,000 acres (22%) of the Red River watershed. About 5,000 acres of harvest along Red River has occurred in RHCAs. Within the immediate analysis area, a private timber company recently removed approximately 1 million board feet of timber from the upper South Fork Clearwater River canyon area. This project was completed in November, 2003. Additional Federal timber harvest is proposed to occur in these watersheds, and includes the Red River Salvage Sale, Red Pines Timber Sale, and Crooked/American Project.

In the 1930s, heavy dredge mining occurred in the upper South Fork Clearwater River from the mouth of Newsome Creek to its upper reaches. Many tributaries to the South Fork Clearwater were also dredged. Long stretches of Crooked River and its tributaries show the effects of bucket dredging, particularly between the mouth and 12 miles upriver to Orogrande, Idaho. There are approximately 2.75 miles of dredged stream on the mainstem Red River and another 4 miles on its tributaries. Most of the region was dredged between the 1930s and 1950s, and commercial suction dredging has occurred from the 1960s to the present. Entire valley-bottom riparian areas were adversely impacted and all potential and existing woody debris was removed. Most of these impacts occurred in the lower gradient reaches, which provide the most productive spawning and rearing habitats for salmonids.

In the South Fork Clearwater River watershed, the BLM (2003) listed watershed road density, streamside road density, peak/base flow, water yield, floodplain connectivity, rearing/migration temperature, cobble embeddedness, percent fines by depth, off-channel habitat, and habitat refugia as “not properly functioning.” Indicators for landslide prone road density, riparian vegetation, sediment yield, spawning temperature, physical barriers-adult/juvenile, and percent surface fines are listed as “functioning at risk.” Width/depth ratios, large woody debris, pool frequency, and pool quality were not rated.

In the Crooked River watershed, streamside road density and mining are the main factors impacting the habitat condition. Existing roads and mine tailings have removed riparian vegetation, increasing temperatures and impairing water quality in Crooked River. The habitat elements streamside road density, riparian vegetation, floodplain connectivity, cobble embeddedness, percent fines, large woody debris, pool frequency, and off-channel habitat are all listed as “not properly functioning”. Watershed road density, change in peak/base flow, sediment yield, width/depth ratio, streambank stability, physical barriers to adults and juveniles, percent surface fines, pool quality, and habitat refugia are listed as “functioning at risk”.

In the Red River watershed, cobble embeddedness, pool frequency, sediment yield, streamside road density and landslide road density are listed as “not properly functioning.” Indicators for riparian vegetation, peak/base flow, width/depth ratio, streambank stability, floodplain connectivity, rearing/migration temperature, fish passage, large woody debris, pool quality, habitat refugia, and off-channel habitat are listed as “functioning at risk”.

All three watersheds are listed by the U.S. Environmental Protection Agency as 303d impaired or threatened water bodies, indicating reduced quality and quantity of summer and winter rearing habitat, which may limit fish production. The current estimated sediment yield over natural levels for the South Fork Clearwater River is 11%. Roads, timber harvest, and mining have increased sediment yield in Crooked River approximately 13% over natural levels. Sediment yield in Red River as a result of roads and timber harvest is currently 24% over natural levels. Additions of sediment to these watersheds have decreased the quality of substrates as habitat for salmon and steelhead. Currently in Crooked River, there are areas where cobble embeddedness exceeds 80%, and generally ranges from 39-45%. Pools are rare in the main channels of Crooked River and Red River, which are predominantly riffles and glides. In Crooked River, instream cover is low, and is mainly provided by instream structures introduced in the late 1980s. There are few trees in the riparian area, resulting in low levels of acting and potential large woody debris. The fish/water quality objectives for the Crooked River and Red River watersheds are listed in the Nez Perce Forest Plan as 90% of natural condition, whereas currently the watersheds are estimated at 50% of natural condition.

The biological requirements of the listed species are not being met under the environmental baseline. Conditions in the action area would have to improve, and further degradation of the baseline, or delay in improvement of these conditions, would probably further decrease the likelihood of survival and recovery of the listed species under the environmental baseline.

Pacific salmon populations also are substantially affected by variation in the freshwater and marine environments. Ocean conditions are a key factor in the productivity of Pacific salmon populations. Stochastic events in freshwater (flooding, drought, snowpack conditions, volcanic eruptions, etc.) can play an important role in a species' survival and recovery, but those effects tend to be localized compared to the effects associated with the ocean. The survival and recovery of these species depends on their ability to persist through periods of low natural survival due to ocean conditions, climatic conditions, and other conditions outside the action area. Freshwater survival is particularly important during these periods because enough smolts must be produced so that a sufficient number of adults can survive to complete their oceanic migration, return to spawn, and perpetuate the species. Therefore it is important to maintain or restore PFC in order to sustain the ESU through these periods. Additional details about the importance of freshwater survival to Pacific salmon populations can be found in Federal Caucus (2000), NMFS (2000a), and Oregon Progress Board (2000).

2.2 Analysis of Effects

Effects of the action are defined as: "the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with the action, that will be added to the environmental baseline" (50 CFR 402.02). Direct effects occur at the project site and may extend upstream or downstream. Indirect effects are defined in 50 CFR 402.02 as "those that are caused by the proposed action and are later in time, but still are reasonably certain to occur." They include the effects on listed species or critical habitat of future activities that are induced by the proposed action and that occur after the action is completed. "Interrelated actions are those that are part of a larger action and depend on the larger action for their justification" (50 CFR 403.02). "Interdependent actions are those that have no independent utility apart from the action under consideration" (50 CFR 402.02).

2.2.1 Habitat Effects

NOAA Fisheries will consider any scientifically credible analytical framework for determining an activity's effect. In order to streamline the consultation process and to lead to more consistent effects determinations across agencies, NOAA Fisheries, where appropriate, recommends that action agencies use the MPI and procedures in NMFS (1996), particularly when their proposed action would take

place in forested, montane environments. NOAA Fisheries is working on similar procedures for other environments. Regardless of the analytical method used, if a proposed action is likely to impair³ properly functioning habitat, appreciably reduce the functioning of already impaired habitat, or retard the long-term progress of impaired habitat toward PFC, it cannot be found consistent with conserving the species. For the streams typically considered in salmon habitat-related consultations, a watershed is a logical unit for analysis of potential effects of an action (particularly for actions that are large in scope or scale). Healthy salmonid populations use habitats throughout watersheds (Naiman *et al.* 1992), and riverine conditions reflect biological, geological, and hydrological processes operating at the watershed level (Nehlsen 1997; Bisson *et al.* 1997; and NMFS 1999).

Although NOAA Fisheries prefers watershed-scale consultations due to greater efficiency in reviewing multiple actions, increased analytic ability, and the potential for more flexibility in management practices, often it must analyze effects at geographic areas smaller than a watershed or basin due to a proposed action's scope or geographic scale. Analyses that are focused at the scale of the site or stream reach may not be able to discern whether the effects of the proposed action will contribute to or be compounded by the aggregate of watershed impacts. This loss of analytic ability typically should be offset by more risk averse proposed actions and ESA analysis in order to achieve parity of risk with the watershed approach (NMFS 1999).

The Whiskey South Fuels Project BA provides an analysis of the effects of the proposed action on Snake River steelhead and their habitat in the action area. The analysis uses the MPI and procedures in NMFS (1996), the information in the BA, and the best scientific and commercial data available to evaluate elements of the proposed action that have the potential to affect the listed fish or essential features of their habitat.

2.2.1.1 Activity-Specific Effects

2.2.1.1.1 Effects of Proposed Vegetative Management. The BLM proposes to use combinations of understory removal, commercial and precommercial thinning, shelterwood harvest, and prescribed burns on 13 units totaling 942 acres to accomplish their vegetative objectives. Within RHCAs in the Crooked River and South Fork Clearwater River watersheds, the BLM will maintain a 50-foot no-harvest buffer strip. The 50-foot buffer is on the lower edge of the harvest units such that tree felling would occur at least 150-400 feet (it varies between units) from streams. Within the remainder of the

³ In the Habitat Approach document (NMFS 1999), to "impair" habitat means to reduce habitat condition to the extent that it does not fully support long term survival of the species. "Impair" and "impaired" are not intended to signify any and all reduction in habitat condition.

RHCA areas of Crooked River and the South Fork Clearwater, the BLM will retain 20-30 trees greater than 16 inches in diameter per acre. In the Red River watershed, along Little Campbell Creek, a PACFISH buffer of 300 feet will be maintained. These buffer strips are generally expected to minimize the potential risk that management actions would further degrade aquatic habitat characteristics for these watersheds.

In all three watersheds, timber harvest activities would occur primarily within first and second order tributaries and along ridge tops. However, there would be approximately 2 miles of RHCA treatments. Within RHCAs, the silvicultural prescriptions are designed to retain sufficient numbers of trees and to encourage larger and healthier trees. Larger and healthier trees should increase shade, help maintain adequate root strength and soil stability, and in the long term, provide a supply of large woody debris for the stream channels.

Although the probability of erosion and mass slope failures in the short term as a result of the proposed action are likely to be somewhat higher than present, project conservation measures should help reduce erosion potential and the likelihood of mass failures. To help control erosion in all three watersheds, tractor skidding and cable yarding would only occur on slopes less than 35 to 40%, thus reducing the likelihood of creating ruts or paths for concentrating water runoff. For slopes greater than 40%, helicopter logging would be used.

The BLM and NPNF are proposing vegetative management on approximately 37 acres of landslide-prone slopes. On slopes ranging from 55-60% (4 units totaling 16.85 acres), the silvicultural treatment is to retain a minimum of 50 trees per acre greater than 16" DBH (diameter breast height). On slopes ranging from 65-80% (5 units totaling 20.15 acres), the silvicultural treatment is a pre-commercial thin where no trees greater than 8" DBH would be cut. For all slope ranges, the preferred retention species are ponderosa pine, western larch, and Douglas-fir, which are the more deep rooted tree species. The BA indicated that these favored retention tree species are more suited for growing in that particular environment, and the number of trees remaining on steeper slopes following treatment are expected to retain sufficient root strength to anchor the soil. Retention of deep-rooted species, and removal of competing shallow-rooted species would maintain or increase long-term slope stability on shallow soils. Following vegetative treatments, larger uncontrolled fires may be less likely to occur and trigger mass failure events. The vegetative treatments are designed to restore stand structure believed to be more representative of pre-fire suppression conditions. A more natural and diverse forest structure that could respond to fires and other disturbances would help maintain aquatic productivity over time, as described by Reeves *et al.* (1995).

Equivalent clearcut area (ECA), a rough indicator of water yield and hydrologic effects, would be increased, but only slightly within the three larger watersheds. Current stand conditions in the proposed action area are denser than would occur under a natural fire regime. The ECA is 7.4% in the South

Fork Clearwater River, 5.2% in Crooked River, and 10.0% in the Red River watersheds. After the Whiskey South Fuels Project is implemented, ECA values will increase to 9.4% in the South Fork Clearwater, 5.5% in Crooked River, and 10.1% in Red River. NOAA Fisheries uses 15% ECA as a threshold of concern regarding effects on hydrology, particularly peak flow, and thus on fish habitat conditions (NMFS 1995). The ECA in Little Campbell Creek is predicted to increase from 13.5% to 27.7%. Little Campbell Creek is a small watershed that has gentle rolling hill terrain, and is not expected to produce a large increase in water yield to Red River. In addition, the section of Red River where Little Campbell Creek enters is a transport reach, and a small increase in peak flow is not expected to have appreciable effect on stream channel scouring and sediment movement/desposition. In the long term, the BA states that the increase in ECA will be offset by planting and natural recovery through vegetation regrowth.

2.2.1.1.2 Effects of Prescribed Fire. The BLM and NPNF are proposing to use understory burning, jackpot burning, and pile burning to achieve their prescribed fire objectives. Understory burning is defined as the burning of small live trees and/or brush and the natural accumulation of dead organic material under a live canopy. Jackpot burning is selectively burning pockets of concentrated fuels. Pile burning is the burning of slash piles that have been stacked generally by excavator, dozer, or by hand. Prescriptions call for approximately 368 acres of underburn, 117 acres of jackpot burn, 446 acres of machine pile and burn, and 11 acres of hand pile and burn.

The BLM and NPNF prescriptions for prescribed fire are for low and moderate fire severity. Fires of this intensity are expected to produce a mosaic burn pattern and reduce overall fuel loads, but should have little effect on the forest canopy, and therefore, should have little effect on shade, large wood, and slope stability. Also, prescribed fires with patchy, mixed severity burns are likely to have insignificant effects on ECA, and therefore, little or no effect on water yield. Many of the units scheduled for vegetative treatments are located in areas of bug-killed trees that have already lost their needles. The proposed prescribed fire and vegetative management activities together may reduce the severity and extent of stand-replacing fire.

Prescribed fires and machine piling activities will temporarily increase the amount of sediment produced in these watersheds. The NEZSED model estimates small increases in sediment delivery in Little Campbell Creek (0.5 tons) and South Fork Clearwater River (1.6 tons) due to prescribed fire. A larger increase of 8.9 tons was estimated for Crooked River. It is likely, however, that sediment generated for prescribed fire will not be routed to Crooked River, due to the 50-foot buffer, the presence of the road prism, and the extensive wetland area, all of which are located between the burn areas and Crooked River. The combined effects of sediment from roads, harvest, and fire effects are further discussed in the section on road effects.

Prescribed fire does involve the potential of escaped fire situations. Most prescribed burns conducted on the NPNF in the past decade have been monitored to determine post-burn effects on both terrestrial and aquatic resources. The monitoring results suggest that burn plan objectives were met, and either no burning occurred in riparian areas, or where it did occur, no overstory mortality occurred (Unpublished reports, 1995-2001, USDA Forest Service 2002). Erosion plots established on the Camp Creek prescribed burn in the South Fork Salmon River exhibited no soil movement on steep slopes over an 8-year period (Unpublished data, 1991-1999, USDA Forest Service 2002). Both the BLM and the NPNF are experienced at undertaking prescribed fires and have been very successful at controlling these fires and achieving their fire objectives.

If a prescribed fire were to escape, the use of fire retardants, foams and wetting agents are not identified in the BA as chemicals proposed for use in the Whiskey South Fuels Project; however, these chemicals are sometimes used with prescribed burns, and particularly with escaped fires. Laboratory studies by Buhl and Hamilton (2000) concluded that if some types of fire-control chemicals were accidentally introduced to water, they would require substantial dilutions (100-1,750-fold) to reach concentrations nonlethal to rainbow trout. Rainwater runoff from watersheds treated with recommended mixed retardant concentrations may pose environmental hazard for weeks after application (Little and Calfee 2002). However, there is a low likelihood of escaped fire (and thus need for retardants) under the conditions for ignition that BLM proposes. Fire suppression guidelines also minimize the likelihood that retardant would be dropped into water. If fire-control chemicals are used, as in the case of an escaped prescribed fire, their use is subject to the conditions outlined in the existing programmatic direction on fire suppression (USDA Forest Service 1999a).

2.2.1.1.3 Effects of Proposed Road Activities. Road construction, reconstruction and decommissioning can affect fish habitat through changes in erosion and sediment delivery rates, and when roads are located in riparian areas, through disturbance of riparian vegetation and stream channels. The effects of the proposed road activities in the Whiskey South project are primarily changes in erosion and sediment delivery from ground disturbance. Existing levels of fine sediment deposition throughout the action area are above thresholds considered to be properly functioning for salmonids, as indicated by cobble embeddedness and percent surface fines. The primary source of excess sediment is believed to be from the road system and legacy mining effects. Effects of the action on riparian vegetation and streambank stability are minor, and would occur only where vegetation might be removed to replace a culvert, and convert an existing culvert to a ford in Little Campbell Creek.

The Whiskey South Fuels Project includes construction of 0.8 miles of new road, 2.6 miles of temporary road, 2.1 miles of road decommissioning, 1.7 miles of road abandonment, and 5.2 miles of road stabilization. When the project is completed, it will result in a net decrease of 3.0 miles of road (2.6 miles in the Campbell Creek and 0.4 miles in the South Fork Clearwater River

drainage). Ground disturbance from construction, reconstruction, and decommissioning roads creates a pulse of sediment in the year when the action occurs. Sediment produced from these activities sharply drops after the initial ground disturbance, tapering off to initial levels within a few years. A new source of chronic sediment will be created by the 0.8 miles of new road construction, but would be more than offset by eliminating chronic sediment produced by the 3.0 miles of existing road that will be abandoned or decommissioned.

The BLM used the NPNF sediment model (NEZSED) to estimate the amount of sediment that would be delivered to first-order stream channels in the action area, expressed as the percentage of sediment delivery over the “natural” baseline. Sediment from road-related activities accounted for 43% of the sediment predicted by the NEZSED model, with the remainder of sediment attributed to prescribed fire and timber harvest. The modeled estimates for existing sediment over the natural baseline is 11% in the South Fork Clearwater, 13% in Crooked River, and 28% in Little Campbell Creek. Based on the proposed timber harvest, road, and prescribed fire activities, sediment created during the first year of activity is predicted to increase 15% in the South Fork Clearwater and 3% in Crooked River. These increases in sediment would diminish over the span of the project before returning to existing levels. In Little Campbell Creek, sediment over base during the first year of activities would increase 26%, but by the third year of activities, sediment levels would drop below existing levels and stabilize around 18.2% over the base.

The net effect of the road activities is a reduction in chronic sediment delivery in Campbell Creek after an initial pulse of sediment, a minor sediment pulse in the Crooked River drainage that would not have noticeable effects, and a protracted, but modest, increase in sediment delivered downstream in the South Fork Clearwater, that would taper off to existing levels or lower after a decade or more has passed. Several studies (Lisle 1982; Platts *et al.* 1989; and Madej and Ozaki 1996) indicate that the recovery time for channel features altered by sediment deposition, such as channel geometry, fine sediments in spawning gravels, and pool depth, varies from a few years to a few decades. In the South Fork Salmon River, monitoring by the Payette National Forest indicates that pool depths have not completely recovered from large influxes of sediment from road failures nearly 40 years ago (documented by Platts *et al.* 1989), in spite of a moratorium on timber harvest and road building, substantial reductions in road density, and other sediment-reducing actions.

The effects of sediment on Snake River steelhead are likely to be greatest in Campbell Creek where there will be a decrease in chronic sediment delivery of approximately 10%, which is expected to improve the condition of spawning and rearing in downstream habitat. The survival rate of juvenile fish is likely to improve in Campbell Creek, to the extent that survival is presently limited by sediment. The effect of project-related sediment on anadromous fish in the South Fork Clearwater River would add incrementally for a decade or more to existing effects of chronic sediment in the stream, followed by an incremental reduction in chronic sediment, once the initial sediment pulse is transported out of the

system. Riverine ecosystems are well-adapted to pulses of sediment, but are adversely affected by chronic sediment (see Waters [1995] for review of effects), which rarely occurs naturally (Yount and Niemi 1990; Reeves *et al.* 1995; Benda *et al.* 1998). Based on the amount of sediment produced by the proposed action and the transport capacity of the South Fork Clearwater River, the magnitudes of the incremental increase and decrease are both small, and would not likely result in measurable changes in cobble embeddedness or percent surface fines.

The project includes safeguards likely to limit potential adverse effects of sediment from road-related activities, beyond the effects described above. Project criteria for temporary roads require a single season of use, avoidance of live water, obliteration of the road, and placement of slash and debris. Sediment from temporary roads could become persistent if the roads were to remain driveable by off-road vehicles, but this possibility would be reduced through obliteration of the road and slash placement. Abandoned roads would remain usable by motorized vehicles, but would be gated to prevent unauthorized use. Based on a study by Reid and Dunne (1984), after roads are abandoned, they are expected to produce significantly less sediment, if road use is infrequent. If abandoned roads continue to be used, but are not maintained, they could become a larger source of sediment than if open and maintained (USGS 2001).

Road related activities could also affect water quality in the action area through the introduction of toxic chemicals to streams. Toxic materials that could be used in the proposed action include fuels, hydraulic fluids, and various petroleum-based lubricants. To reduce the risk of petroleum products from spilling or reaching water, the proposed action includes mitigation for fuel storage and refueling to occur outside of RHCA boundaries, and for inspections for hydraulic and other leaks on equipment machinery before entering an RHCA. Adverse effects from fuels, hydraulic fluids and lubricants are not expected to occur through the proposed action, but could occur from an accidental spill.

2.2.1.1.4 Effects of Culvert Replacement and Removal. In the Whiskey South Fuels Project, the BLM will replace two culverts impeding fish passage in Little Campbell Creek. One culvert will be replaced with a squash culvert sized to pass 100-year flood and bankfull flows, and one culvert will be replaced with a low-water ford crossing.

The effects of these two culvert replacements is expected to be minimal. Turbidity is anticipated to occur only at those times when the existing culvert is pulled, when the stream is diverted into or out of a temporary culvert or channel, and when water is routed back through the new culvert or ford. There will be short-term increases in suspended sediment and surficial sediment deposition downstream, but these effects are expected to be of a short duration and magnitude. In the long term, culvert replacements would improve or restore fish passage and reduce the likelihood of road fill failures. To reduce potential sediment delivery, replacement activities would occur during low flow time periods

between July 15 and October 15. During construction activities, sediment fences and/or other erosion control fabric, pumps, riprap, woody debris, and replanting will be used. Also, the road where the ford will be installed is a gated spur road used only by AVISTA utilities. The ford approach and departure will be graveled to reduce sediment delivery. Since the ford placement and the culvert installation are both upstream in Little Campbell Creek where the creek is narrow and shallow, it is unlikely that steelhead are found at those sites during low flow periods when the roads are likely to be used.

The installation of a higher capacity culvert and the low-water ford would improve natural hydrologic functions. This would contribute to improved habitat quality by transporting of trapped sediments and organic debris to downstream reaches. The higher capacity culvert would also reduce the probability of damage to aquatic habitats from plugged culverts and subsequent erosion of road fills.

2.2.2 Species Effects

The effect that a proposed action has on particular essential features or MPI pathways can be translated into a likely effect on population growth rate. However, in the case of this consultation, it is not possible to quantify an incremental change in survival for Snake River steelhead.

Based on the effects to habitat described above, the Whiskey South Fuels Project would have a small, but negative effect on survival and recovery of Snake River steelhead for approximately 7 years, by which time, project related sediment delivered in the short term likely would have been transported out of the action area. Road decommissioning would begin to reduce chronic sediment inputs to the systems within 3-4 years of implementation. Improved fish passage from the new culvert and ford would provide an immediate increase in the amount of accessible habitat, and a slight potential for increased juvenile survival in Little Campbell Creek. Overall, though, listed steelhead populations are not expected to appreciably change as a result of these fish passage improvements since the affected tributary is small and is not likely to support large numbers of steelhead. Short-term sediment effects are likely to continue in the action area for about 7 years before sediment drops below pre-project levels. In the long term (7 years or more after the project is completed in its entirety), the availability of spawning habitat and the carrying capacity for steelhead could increase slightly as a combined result of improved fish passage, reductions in sediment yield, and improved riparian conditions.

2.2.3 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." These activities within the action area also have the

potential to adversely affect the listed species and critical habitat. Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being reviewed through separate section 7 consultation processes. Federal actions that have already undergone section 7 consultations have been added to the description of the environmental baseline in the action area.

State, tribal, and local government actions will likely be in the form of legislation, administrative rules or policy initiatives. Government and private actions may encompass changes in land and water uses including ownership and intensity, any of which could adversely affect listed species or their habitat. Government actions are subject to political, legislative, and fiscal uncertainties.

Changes in the economy have occurred in the last 15 years, and are likely to continue, with less large-scale resource extraction, more targeted extraction, and significant growth in other economic sectors. Growth in new businesses, primarily in the technology sector, is creating urbanization pressures and increased demands for buildable land, electricity, water supplies, waste-disposal sites, and other infrastructure.

Economic diversification has contributed to population growth and movement, and this trend is likely to continue. Such population trends will result in greater overall and localized demands for electricity, water, and buildable land in the action area; will affect water quality directly and indirectly; and will increase the need for transportation, communication, and other infrastructure. The impacts associated with these economic and population demands will probably affect habitat features such as water quality and quantity, which are important to the survival and recovery of the listed species. The overall effect will likely be negative, unless carefully planned for and mitigated.

There are no specific future state or private activities reasonably certain to occur in the action area; however, present activities and their effects described under the environmental baseline are likely to persist beyond the duration of this project. Private land uses in the entire analysis area include agriculture, fire suppression, timber harvest, roads, development, urban areas, recreation, mining, and livestock grazing, all of which could potentially affect fish habitat in the future. These actions would likely lead to incremental increases in sediment delivery, along with the loss of shade and potential large woody debris (USDA Forest Service 1999c). Cattle grazing on private lands occurs in the Red River watershed and is expected to continue. Cattle grazing can have deleterious effects on riparian vegetation and streambank stability, and may contribute to overall sediment production.

The Idaho Department of Environmental Quality will establish total maximum daily loads (TMDLs) in the Snake River basin, a program regarded as having positive water quality effects. The TMDLs are required by court order, so it is reasonably certain they will be set. The State of Idaho has created an Office of Species Conservation to work on subbasin planning and to coordinate the efforts of all state

offices addressing natural resource issues. Demands for Idaho's groundwater resources have caused groundwater levels to drop and reduced flow in springs for which there are senior water rights. The Idaho Department of Water Resources has begun studies and promulgated rules that address water right conflicts and demands on a limited resource. The studies have identified aquifer recharge as a mitigation measure with the potential to affect the quantity of water in certain streams, particularly those essential to listed species.

2.2.4 Consistency with Listed Species ESA Recovery Strategies

Recovery is defined by NOAA Fisheries regulations (50 CFR 402) as an "improvement in the status of listed species to the point at which listing is no longer appropriate under the criteria set out in section 4 (a)(1) of the Act." Recovery planning is underway for listed Pacific salmon in the Northwest with technical recovery teams identified for each domain. Recovery planning will help identify measures to conserve listed species and increase the survival of each life stage. NOAA Fisheries also intends that recovery planning identify the areas/stocks most critical to species conservation and recovery and thereby evaluate proposed actions on the basis of their effects on those areas/stocks.

Until the species-specific recovery plans are developed, the FCRPS Opinion and the related December 2000 *Memorandum of Understanding Among Federal Agencies Concerning the Conservation of Threatened and Endangered Fish Species in the Columbia River Basin* (together these are referred to as the Basinwide Salmon Recovery Strategy) provides the best guidance for judging the significance of an individual action relative to the species-level biological requirements. In the absence of completed recovery plans, NOAA Fisheries strives to ascribe the appropriate significance to actions to the extent available information allows. Where information is not available on the recovery needs of the species, either through recovery planning or otherwise, NOAA Fisheries applies a conservative substitute.

The BLM and NPNF have specific commitments to uphold under the Basinwide Salmon Recovery Strategy. For Federal lands, PACFISH, and land management plans define these commitments. The proposed action is consistent with the specific commitments and primary objectives of the Basinwide Salmon Recovery Strategy by keeping short-term sediment production to a minimum and by reducing long-term sediment production, adding increased aquatic habitat structure and complexity, and by increasing fish passage to upstream spawning and rearing areas.

2.3 Conclusions

The fourth step in NOAA Fisheries' approach to determine jeopardy and adverse modification of critical habitat is to determine whether the proposed action, in light of the above factors, is likely to appreciably reduce the likelihood of species survival and recovery in the wild or adversely modify or

destroy critical habitat. For the jeopardy determination, NOAA Fisheries uses the consultation regulations and, where appropriate, the Habitat Approach (NMFS 1999) to determine whether actions would further degrade the environmental baseline or hinder attainment of PFC at a spatial scale relevant to the listed ESU. The analysis must be applied at a spatial resolution wherein the actual effects of the action upon the species can be determined.

2.3.1 Species Conclusion

After reviewing the current status of Snake River steelhead, the environmental baseline for the action area, the effects of the proposed action, and cumulative effects in the action area, it is NOAA Fisheries' opinion that the Whiskey South Fuels Project is not likely to jeopardize the continued existence of Snake River steelhead.

There is insufficient information available on steelhead demographics in the action area to develop quantitative predictions of changes in mortality and fish production from the proposed action. However, the nature, magnitude, and duration of habitat effects provides the basis for a qualitative assessment of survival and recovery risks created by the proposed action. The action area is presently impaired by sediment and legacy effects of past timber harvest and commercial dredge mining, which allows little room for additional sediment impacts without increasing mortality or perpetuating existing low mortality rates of early life stages. Reduced survival rates of embryos, alevins, fry, and parr are expected to occur from increased sediment caused by short-term effects from the proposed action (within the first 7 years), while survival rates in the long term are expected to return to existing levels, or improve slightly once the sediment is transported out of the action area.

Given project designs to maintain or improve riparian and slope stability functions, some road work that reduces sediment delivery, and the very few intersections of road activities with water courses, project related sediment inputs in the short term are expected to be small, dispersed, and in some areas offset by sediment reductions. Short-term sediment increases would be virtually immeasurable as changes in embeddedness or percent surface fines in spawning gravels, but it would perpetuate effects of chronic sediment from legacy effects of past timber harvest and commercial dredge mining, until the effects of sediment reducing activities are realized. The survival rate of early steelhead life stages would remain the same or slightly lower while the project-related sediment is routed downstream, and may increase slightly in the long term. Given the small magnitude of change in steelhead survival in the action area and the 7-year duration of the increased sediment inputs, the proposed action would not appreciably influence survival or recovery of the steelhead population in the South Fork Clearwater River subbasin or in the Snake River Steelhead ESU.

Specific factors considered in reaching this determination are: (1) Near-term adverse effects of the proposed action are not likely to impede the long-term progress toward sediment reduction because long-term reductions in future sediment delivery will occur, and the magnitude of the short-term sediment increase is small; (2) incidental take is expected to occur in isolated circumstances (e.g. culvert replacements and possibly from erosion related to escaped fire) and would involve few juveniles; consequently, the proposed action would not, in the short term, appreciably reduce survival of Snake River steelhead; and (3) in the long term, the proposed action is expected to contribute to the recovery of Snake River steelhead through reductions in sediment yield, rehabilitation of riparian areas degraded by streamside roads, and improved fish passage.

2.4 Conservation Recommendations

Conservation recommendations are defined as “discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information” (50 CFR 402.02). Section 7 (a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. The conservation recommendations listed below are consistent with these obligations and therefore should be implemented by the BLM.

1. The BLM should consider road decommissioning versus proposed abandonment where decommissioning would further reduce erosion.

In order for NOAA Fisheries to be kept informed of actions minimizing or avoiding adverse effects, or those that benefit listed species or critical habitat, NOAA Fisheries requests notification of the achievement of any conservation recommendations when the action agency submits its monitoring report describing action under this Opinion or when the project is completed.

2.5 Reinitiation of Consultation

As provided in 50 CFR 402.16, reinitiation of formal consultation is required if: (1) The amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; (2) new information reveals effects of the action may affect listed species in a way not previously considered; (3) the action is modified in a way that causes an effect on listed species that was not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease, pending conclusion of the reinitiated consultation.

2.6 Incidental Take Statement

The ESA at section 9 (16 USC 1538) prohibits take of endangered species. The prohibition of take is extended to threatened anadromous salmonids by the section 4(d) rule (50 CFR 223.203). Take is defined by the statute as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” (16 USC 1532(19)). Harm is defined by regulation as “an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavior patterns, including, breeding, spawning, rearing, migrating, feeding, or sheltering” (50 CFR 222.102). Harass is defined as “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering” (50 CFR 17.3). Incidental take is defined as “takings that result from, but are not the purpose of, carrying out of an otherwise lawful activity conducted by the Federal agency or applicant” (50 CFR 402.02). The ESA at section 7(o)(2) removes the prohibition from any incidental taking that is in compliance with the terms and conditions specified in a section 7(b)(4) Incidental Take Statement (16 USC 1536).

An Incidental Take Statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.6.1 Amount or Extent of Take

The proposed action is reasonably certain to result in incidental take of the listed species. NOAA Fisheries is reasonably certain the incidental take described here will occur because: (1) Snake River steelhead are known to occur in the action area; and (2) the proposed action is likely to cause impacts to steelhead habitat significant enough to reduce the survival rate of early life stages (embryo, alevin, fry, and parr) as a result of turbidity and sediment deposition in spawning and rearing areas. Despite the use of best scientific and commercial data available, NOAA Fisheries cannot quantify a specific amount of incidental take of individual fish or incubating eggs for this action. Instead, the extent of take is anticipated to be no more than the extent of the action area (all stream channel reaches in the upper South Fork Clearwater River, lower Crooked River, and lower Red River watersheds that are downstream from ground disturbing activities), for a duration of no more than seven years, from the following activities: 942 acres of ground disturbance from timber harvest and fire, 12.0 miles of road work (including permanent and temporary roads, road decommissioning, and road stabilization), and two culvert replacements. The authorized take includes take caused by the proposed action within the action area, as defined in this Opinion.

The extent of take from instream work includes all juvenile steelhead in the immediate areas where instream activities will occur, and fish-bearing stream reaches immediately upstream and downstream from each area. A small number of juvenile steelhead may be harmed during instream work. The number of fish directly killed or injured during instream work is expected to be low because use of the tributary streams by listed steelhead is low where culverts would be removed.

2.6.2 Reasonable and Prudent Measures

Reasonable and Prudent Measures (RPMs) are non-discretionary measures to minimize take, that may or may not already be part of the description of the proposed action. They must be implemented as binding conditions for the exemption in section 7(o)(2) to apply. The BLM has the continuing duty to regulate the activities covered in this Incidental Take Statement. If the BLM fails to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms that are added to the permit or grant document, or fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse. NOAA Fisheries believes that activities carried out in a manner consistent with these RPMs, except those otherwise identified, will not necessitate further site-specific consultation. Activities which do not comply with all relevant RPMs will require further consultation.

NOAA Fisheries believes that the following RPMs are necessary and appropriate to minimize take of listed fish resulting from implementation of this action. These RPMs would also minimize adverse effects on designated critical habitat.

The BLM shall:

1. Monitor the effects of the proposed action to determine the actual project effects on listed fish (50 CFR 402.14 (I)(3)). Monitoring should detect adverse effects of the proposed action, assess the actual levels of incidental take in comparison with anticipated incidental take documented in the Opinion, and detect circumstances where the level of incidental take is exceeded.
2. Minimize the impact of incidental take from all plans of operation.
3. Minimize the impact of incidental take from instream work activities.
4. Minimize the impact of incidental take resulting from timber harvest, soil restoration, and road activities.
5. Minimize the impact of incidental take resulting from fuels and/or toxic material pollution.

6. Minimize the impact of incidental take resulting from prescribed fire.

2.6.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the action must be implemented in compliance with the following terms and conditions, which implement the RPMs described above for each category of activity. These terms and conditions are non-discretionary.

1. To implement Reasonable and Prudent Measure 1 (monitoring), above, the BLM shall:

1a. Report annually to NOAA:

- (1) Compliance with implementation of the terms and conditions.
- (2) Report the levels of incidental take, as indicated by the acres of ground-disturbing activities conducted each year under this project, instream work, and any event caused by, or exacerbating the effects of the proposed action (such as a landslide or rain-on-snow events) that generates significant amounts of sediment in the action area.
- (3) Remedies to address and resolve problems identified in 1a(1) and 1a(2), above.
- (4) Any environmental effects of the action that were not considered in the BA or this Opinion.
- (5) Prescribed fire activities from the Whiskey South Fuels Project and related monitoring results as established in the Programmatic Biological Assessment of the Fire Management Program (USDA Forest Service 1999a).

1b. Notify NOAA Fisheries promptly of any emergency or unanticipated situations in the action area that may be detrimental to steelhead. NOAA Fisheries will then determine if project activities must cease or may continue, pending resolution of the problem and impacts.

1c. Submit all monitoring reports, to: NOAA Fisheries, Grangeville Field Office, 102 N. College, Grangeville, Idaho 83530.

2. To implement Reasonable and Prudent Measure 2 (plans of operation), above, the BLM shall:

Ensure designs and plans for on the ground operations are incorporated into permits, grants, or contracts, and include BLM and Nez Perce National Forest standards, ESA requirements, and all terms and conditions of this Opinion.

3. To implement Reasonable and Prudent Measure 3 (instream work), above, the BLM shall:

- 3a. Conduct all instream work between July 1 and October 15. The work window may be adjusted on a site-specific basis with Level 1 Team approval.
- 3b. Operate equipment used for culvert activities from existing roads or the streambank (construction equipment will not enter the active stream). Require hand work where machines will cause undue soil disturbance.
- 3c. Revegetate disturbed areas with native seeds or annual grasses to establish soil stabilizing vegetation and prevent the spread of weeds.
- 3d. Design culverts to accommodate 100-year flood events, approximate natural channel width, flow velocities, substrate condition, stream gradients, and accommodate passage of fish. Minimum culvert width must be equal to or greater than bankfull stream width.
- 3e. Use appropriate sediment control measures at culvert replacement and removal sites (e.g. silt fences, straw bales, lined ditches) to minimize sediment transport into the stream channel and downstream from project sites.
- 3f. Determine if steelhead redds are located near instream construction sites. If redds are located, instream work shall not begin until a fisheries biologist verifies that juveniles have emerged from the redd(s), as indicated by the presence of age-0 fish in the vicinity of the redd(s).
- 3g. Exclude steelhead from instream work areas through removal of fish and use of block nets above and below the work site. A fisheries biologist or fisheries technician shall move listed fish out of the work site to the closest point where the fish are unlikely to be harmed by the instream activities, using electrofishing (Refer to NMFS (2000b) electrofishing guidelines), nets, or another approach, that most effectively removes fish with the least potential for injury.

- 3h. Require operators of construction equipment and/or construction personnel to immediately cease operation if a sick, injured, or dead specimen of a threatened or endangered species is found as a result of the proposed action. The finder must notify the BLM, which in turn will contact the Vancouver Field Office of NOAA Fisheries Law Enforcement at (360) 418-4246 before resuming activities. The finder must take care in handling sick or injured specimens to ensure effective treatment, and in handling dead specimens to preserve biological material in the best possible condition for later analysis of cause of death. The finder also has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed unnecessarily.
4. To implement Reasonable and Prudent Measure 4 (timber harvest, soil restoration, and road activities), above, the BLM shall:
- 4a. Adhere to the following terms and conditions for timber harvest activities:
- (1) Design harvest prescriptions in landslide prone areas to maintain suitable root strength to anchor soils and avoid active landslides, consistent with PACFISH.
 - (2) Designate skid trail locations to reduce soil compaction and minimize soil erosion.
 - (3) Locate log landings outside of RHCA's unless use of the RHCA has fewer impacts than an alternative area outside the RHCA, or where use of a log landing in an RHCA would have a negligible effect on riparian vegetation or stream conditions. The reasons for locating landings within an RHCA must be documented and placed in the file prior to any such locations in the RHCA. This documentation must also be reported in the annual monitoring report described in 1a above.
- 4b. Adhere to the following terms and conditions during soil restoration activities:
- (1) Conduct soil restoration activities during the normal dry season, and restrict to periods when soil moisture and weather are unlikely to exacerbate soil compaction or sediment production from the restoration activities.
 - (2) Minimize machine disturbance by requiring hand work where machines will cause undue soil disturbance.
 - (3) Retain areas of intact, functioning riparian vegetation where possible.

- (4) Protect disturbed areas with mulch, slash, or other ground cover, and use native seed or annual grasses to establish soil-stabilizing vegetation and prevent the spread of weeds. Apply seeds at the earliest opportunity for germination.

4c. Adhere to the following terms and conditions during new and temporary road construction:

- (1) Construct roads to the minimum standard necessary for accommodation of vehicle types, season of use, and resource protection.
- (2) Minimize the number of stream crossings. Select stream-crossing locations with stable channels and banks, to minimize channel and bank disturbance.
- (3) Locate roads outside of RHCAs to avoid adverse effects on streams, wetlands, and landslide prone terrain, except at stream crossings, unless no other feasible engineering options exists or unless alternative locations will create a higher risk of sediment delivery.
- (4) Provide frequent ditch relief structures to prevent road drainage water from running long distances to live water and intermittent streams.
- (5) Construct slash filter windrows during road construction on slopes greater than 25% and where they will provide benefits to nearby aquatic resources.

4d. Adhere to the following terms and conditions during road decommissioning (permanent closures) activities:

- (1) Reconstruct stream crossings to approximate the natural condition, except for circumstances where adverse effects would be less with an alternative design. Ensure that the stream channel and floodplain cross-sections are returned to contours that approximate the natural widths, depths and slopes, and stream grades are returned to near natural condition. Install grade control structures if needed to meet objectives.

- (2) Employ seasonal controls and timing as well as contract requirements, regarding operating conditions of decommissioning activities, to minimize potential for sediment production, which may affect fish species' life stages. A BLM fisheries biologist will review the proposed decommissioning activities and contract requirements.
- (3) Exclude cattle use of, or access to, restored areas until the vegetation has been reestablished to the point that these areas can withstand cattle use without damage to the soil or vegetation.

4e. Adhere to the following terms and conditions during road stabilizing activities:

- (1) Outslope the road surface, except in cases where outslowing would increase sediment delivery to streams or where outslowing is infeasible or unsafe, consistent with PACFISH.
- (2) Route road drainage away from potentially unstable stream channels, fills, and hillslopes, consistent with PACFISH
- (3) To minimize erosion from roads, use measures such as signs, gates, and/or barriers to exclude public vehicular use of, or access to stabilized and abandoned road sections.

4f. Adhere to the following terms and conditions during winter road usage:

- (1) Inform NOAA Fisheries on the protocols for winter road use in the event that temporary roads must be used during winter.
- (2) Cease project activities, in accordance with the Idaho Forest Practices Act, during wet periods (rain, snow, sleet) where such activities may cause excessive ground disturbance or excessive damage to roads.
- (3) Adhere to standards and guidelines established in the Road Management Programmatic BA (USDA Forest Service 1999b) during snow plowing activities and incorporate into the provisions of any contract.

5. To implement Reasonable and Prudent Measure 5 (fuel and/or toxic material pollution), above, the BLM shall:
 - 5a. Prepare and implement a Spill Prevention Control and Counter Measures Plan (40 CFR 112), prior to fuel hauling.
 - 5b. Locate areas for fuel storage, equipment storage, and equipment refueling and maintenance outside of RHCAs away from any water body.
 - 5c. Notify NOAA Fisheries as soon as possible of any fuel spill of 1 gallon or more.
 - 5d. Inspect and clean all equipment used for construction prior to arriving at the project.
 - 5e. Inspect heavy equipment daily to assure there are no hydraulic fluid, fuel, or oil leaks.
6. To implement Reasonable and Prudent Measure 6 (prescribed fire), above, the BLM shall:
 - 6a. Comply with the requirements of the Fire Management Programmatic BA (USDA Forest Service 1999a).
 - 6b. To minimize the potential for adverse effects to riparian vegetation and water quality, allow no aerial prescribed fire ignitions in streamside RHCAs.

3. MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT

3.1 Statutory Requirements

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under a Federal fisheries management plan.

Pursuant to the MSA:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (section 305(b)(2)).
- NOAA Fisheries must provide conservation recommendations for any Federal or state action that may adversely affect EFH (section 305(b)(4)(A)).

- Federal agencies must provide a detailed response in writing to NOAA Fisheries within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with NOAA Fisheries EFH conservation recommendations, the Federal agency must explain its reasons for not following the recommendations (section 305(b)(4)(B)).

The EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA section 3). For the purpose of interpreting this definition of EFH: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.10). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

The EFH consultation with NOAA Fisheries is required for any Federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action may adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects on EFH.

3.2 Identification of EFH

Pursuant to the MSA the Pacific Fishery Management Council (PFMC) has designated EFH for three species of Federally-managed Pacific salmon: chinook (*Oncorhynchus tshawytscha*); coho (*O. kisutch*); and Puget Sound pink salmon (*O. gorbuscha*)(PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC 1999), and longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in

Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based, in part, on this information.

3.3 Proposed Action

The proposed action and action area are detailed above in Sections 1.2 and 1.3 of this document. The action area includes habitats that have been designated as EFH for various life-history stages of Snake River spring/summer chinook salmon.

3.4 Effects of Proposed Action on EFH

The effects on Snake River chinook salmon are the same as those for Snake River steelhead as described in detail in Section 2.2.1 of this document. The proposed action may result in adverse effects on chinook salmon EFH through these mechanisms:

1. Erosion and sediment delivery to streams resulting from harvest, road, prescribed fire, and instream work activities.
2. Potential for short term decrease in slope stability, and thus increased likelihood of mass failures, resulting from harvest, road, and prescribed fire activities.
3. Potential fuel and/or toxic material pollution resulting from road, and instream work activities.
4. Temporary reductions in riparian functions (large woody debris (LWD) recruitment, shade, and streambank stability) resulting from road and instream work activities.
5. Changes in water yield (e.g., peak flow) resulting from harvest activities.

3.5 Conclusion

NOAA Fisheries concludes that the proposed action may adversely affect designated EFH for Snake River spring/summer chinook salmon.

3.6 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations to Federal agencies regarding actions that may adversely affect EFH. NOAA Fisheries understands that the conservation measures described in the BA will be implemented by the BLM, and believes that these measures are not sufficient to minimize, to the maximum extent practicable, the following EFH effects: sediment deposition in streams, fuel and/or toxic material pollution, loss of LWD, increased stream temperature, loss of instream cover and refugia, alteration of food supply, streambed habitat, and hydraulic characteristics. Although, these conservation measures are not sufficient to fully address the remaining adverse effects to EFH, specific Terms and Conditions outlined in Section 2.6.3 are generally applicable to designated EFH for Snake River spring/summer chinook salmon, and do address these adverse effects. Consequently, NOAA Fisheries recommends that the following terms and conditions also serve as EFH conservation measures.

1. Term and Condition 1 (monitoring) will identify and minimize project effects on erosion and sediment delivery, soil stability and the likelihood of mass failures, toxic material pollution, riparian function, water yield, and water quality.
2. Term and Condition 2 (plans of operation) will minimize project effects on erosion and sediment delivery, soil stability and the likelihood of mass failures, toxic material pollution, riparian function, water yield, and water quality.
3. Term and Condition 3 (instream work activities) will minimize project effects on erosion and sediment delivery, riparian function, and water quality.
4. Term and Condition 4 (timber harvest activities) will minimize project effects on erosion and sediment delivery, soil stability and the likelihood of mass failures, riparian function, water yield, and water quality.
5. Term and Condition 5 (fuel and/or toxic material pollution) will minimize project effects on toxic material pollution, riparian function, and water quality.
6. Term and Condition 6 (prescribed fire activities) will minimize project effects on erosion and sediment delivery, soil stability and the likelihood of mass failures, riparian function, water yield, and water quality.

3.7 Statutory Response Requirement

Pursuant to the MSA (section 305(b)(4)(B)) and 50 CFR600.920(j), Federal agencies are required to provide a detailed written response to NOAA Fisheries' EFH conservation recommendations within 30 days of receipt of these recommendations. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. In the case of a response that is inconsistent with the EFH conservation recommendations, the response must explain the reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

3.8 Supplemental Consultation

The BLM must reinitiate EFH consultation with NOAA Fisheries if the proposed action is substantially revised in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920(l)).

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